

Electricity and Magnetism, China, NIM (National Institute of metrology)

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty						
Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?	Comments	NMI Service Identifier
DC voltage source: single value	Standard cell, solid state voltage standard	Comparison	0.1	1.018	V			0.013	µV/V	2	95%	Yes		1
DC voltage source: single value	Standard cell, solid state voltage standard	Comparison	1	10	V			0.01	µV/V	2	95%	Yes		2
DC voltage source: single value	Standard cell	Comparison	1.018	1.018	V			0.1	µV/V	3	99%	Yes	Oil bath temperature	3
DC voltage sources: low value ranges <= 10 V	DC voltage sources, multifunction calibrator	DC voltmeter	0.1	10	V			5.1 to 1.8	µV/V	3	99%	Yes		4
DC voltage sources: value ranges > 10 V to 1100 V	DC voltage sources, multifunction calibrator	DC voltmeter	10	1000	V			2.0 to 3.9	µV/V	3	99%	Yes		5

Calibration and Measurement Capabilities

DC voltage meters: value > 1 mV to 1100 V	DC voltmeter, multimeter, multifunction transfer standard	Comparison with DC voltage source	0.01	10	V			10 to 2.0	µV/V	3	99%	Yes		6,7
DC voltage ratios: up to 1000 V	Resistive divider, ratio meter		10	1000	V			0.3 to 0.5	µV/V	3	99%	Yes		8
DC current sources: intermediate values ≥ 0.1 mA to 20 A	Current generator, multifunction calibrator	Resistance standards	0.0001	10	A			10 to 50	µV/V	3	99%	Yes		9
DC current sources: intermediate values ≥ 0.1 mA to 20 A	Multimeter, multifunction transfer standard	Comparison with multifunction calibrator	0.0001	10	A			15 to 60	µA/A	3	99%	Yes		10
DC resistance sources: multiple ranges	Multifunction calibrator	Comparison with resistance standards	10	10000000	Ω	Resistance	10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ	5 to 10	µΩ/Ω	3	99%	Yes	Correction for temperature	11
						Temperature	20 °C							
DC resistance meters: intermediate value $> 1 \Omega$ to 1 GΩ	Multimeter, multifunction transfer standard	Comparison with resistance standards	10	10000000	Ω	Resistance	10 Ω, 100 Ω, 1 kΩ, 10 kΩ, 100 kΩ, 1 MΩ, 10 MΩ	5 to 10	µΩ/Ω	3	99%	Yes	Correction for temperature	12
						Temperature	20 °C							
DC resistance sources: lower than 1 Ω	Fixed resistor	DCC bridge	0.0001	0.1	Ω	Resistance	0.0001 Ω, 0.001 Ω, 0.01 Ω, 0.1 Ω	5 to 1.5	µΩ/Ω	2	95%	Yes		13

Calibration and Measurement Capabilities

						Temperature of oil or air bath	20 °C							
DC resistance sources: from 1 Ω to 1 MΩ	Fixed resistor	DCC bridge	1	1	Ω	Temperature of oil or air bath	20 °C	0.25	µΩ/Ω	2	95%	Yes		14
DC resistance sources: from 1 Ω to 1 MΩ	Fixed resistor	DCC bridge and Hamon resistors	10	1000	Ω	Resistance	10 Ω, 100 Ω, 1000 Ω	0.5	µΩ/Ω	2	95%	Yes		15
						Temperature of oil or air bath	20 °C							
DC resistance sources: from 1 Ω to 1 MΩ	Fixed resistor	High resistance bridge and Hamon resistor	10	10	kΩ	Temperature of oil or air bath	20 °C	0.5	µΩ/Ω	2	95%	Yes		16
DC resistance sources: from 1 Ω to 1 MΩ	Fixed resistor	High resistance bridge	100	1000	kΩ	Resistance	100 kΩ, 1000 kΩ	1 to 3	µΩ/Ω	2	95%	Yes		17
						Temperature of air bath	20 °C							
DC resistance sources: higher than 1 MΩ	Fixed resistor; three terminal resistor	High resistance bridge	10	1000	MΩ	Resistance	10 MΩ, 100 MΩ, 1000 MΩ	10 to 50	µΩ/Ω	2	95%	Yes		18
						Temperature of air bath	20 °C							
DC resistance sources: multiple ranges	Multifunction calibrator	DCC bridge and high resistance bridge	1	1.00E+08	Ω	Temperature of oil or air bath	20 °C	5 to 30	µΩ/Ω	2	95%	Yes		19

Calibration and Measurement Capabilities

Inductance: self inductance, lower than 1 mH	Fixed inductor, variable inductor, inductance box	Modified Maxwell bridge	1	100	μH	Inductance	1 μH , 2 μH , 3 μH , 5 μH , 10 μH , 20 μH , 30 μH , 50 μH , 100 μH	3	nH/H	2	95%	Yes		20
						Frequency	50 Hz to 2.5 kHz							
Inductance: self inductance, lower than 1 mH	Fixed inductor, variable inductor, inductance box	Modified Maxwell bridge	0.2	1	mH	Inductance	0.2 mH, 0.3 mH, 0.5 mH, 1 mH	30	$\mu\text{H}/\text{H}$	2	95%	Yes		21
						Frequency	50 Hz to 2.5 kHz							
Inductance: self inductance 1 mH to 1 H	Fixed inductor, variable inductor, inductance box	Modified Maxwell bridge	0.002	1	H	Inductance	0.002 H, 0.003 H, 0.005 H, 0.01 H, 0.02 H, 0.03 H, 0.05 H, 0.1 H, 0.2 H, 0.3 H, 0.4 H, 0.5 H, 1 H	30	$\mu\text{H}/\text{H}$	2	95%	Yes		22
						Frequency	50 Hz to 2.5 kHz							
Inductance: meter	LCR meter	Comparison	0.0001	1	H	Inductance	0.0001 H, 0.001 H, 0.01 H, 0.1 H, 1 H	50	$\mu\text{H}/\text{H}$	2	95%	Yes		23
Capacitor: low loss capacitors	Standard capacitor (sealed, dry nitrogen or silica dielectric)	Comparison	1	10000	pF	Capacitance	1 pF, 10 pF, 100 pF, 1000 pF, 10000 pF	10	$\mu\text{F}/\text{F}$	2	95%	Yes		24
Capacitor: low loss capacitors	Standard capacitor (sealed, dry nitrogen or silica dielectric)	Capacitance bridge	1	1000	pF	Capacitance	0.5 pF, 1 pF, 10 pF, 100 pF, 1000 pF	1	$\mu\text{F}/\text{F}$	2	95%	Yes		25

Calibration and Measurement Capabilities

Capacitor: dielectric capacitor	Fixed capacitor, variable capacitor, capacitance box	Direct comparison	1	1E+06	pF			100	$\mu\text{F/F}$	2	95%	Yes		26
Capacitor: dissipation factor D	Standard capacitor (air, fused silica)	Comparison	1E-06	1E-04		Capacitance	10 pF, 100 pF, 1000 pF, 10000 pF (relative expanded uncertainty on capacitance: 10E-06)	1	1E-06	2	95%	No		27
						Frequency	40 Hz to 1000 Hz							
Capacitor: dissipation factor, $\tan\delta$	Capacitor: dielectric capacitor	Direct comparison	1E-04	0.1		Capacitance	1 pF to 1E+06 pF (relative expanded uncertainty on capacitance: 100E-06)	1 to 100	1E-06	2	95%	No		28
						Frequency	40 Hz to 1000 Hz							
Dissipation factor standard, $\tan\delta$	Fixed dissipation factor standard, dissipation factor standard box	Direct	1E-06	1		Capacitance	1 pF to 10 mF (relative expanded uncertainty on capacitance: 100E-06)	1 to 1000	1E-06	2	95%	No		29
						Frequency	40 Hz to 1000 Hz							

Calibration and Measurement Capabilities

High voltage impedance: capacitor	Compressed gas capacitor, capacitor for high voltage	Direct comparison	10	1E+04	pF	Voltage	10 kV to 1 kV	10	$\mu\text{F/F}$	2	95%	Yes		30
						Frequency	40 Hz to 60 Hz							
High voltage impedance: dissipation factor, $\tan\delta$	Compressed gas capacitor, capacitor for high voltage	Direct comparison	1E-06	0.1		Voltage	10 kV to 1 kV	1 to 500	1E-06	2	95%	No		31
						Frequency	40 Hz to 60 Hz							
Capacitance: meter	LCR meter	Comparison	1E-04	1	μF	Capacitance	0.0001 μF , 0.001 μF , 0.01 μF , 0.1 μF , 1 μF	50	$\mu\text{F/F}$	2	95%	Yes		32
Dielectric properties: relative permittivity, real part	Solid materials, liquid materials	Direct	1	100				1	1E-02	2	95%	Yes		33
Dielectric properties: dielectric loss tangent, $\tan\delta$	Solid materials, liquid materials	Direct	0.0001	10				1	1E-02	2	95%	Yes		34
AC resistance: real component	Fixed resistor	Quadrature bridge	1	10	k Ω	Resistance	10 k Ω , 1 k Ω	1	$\mu\Omega/\Omega$	2	95%	Yes		35
						Frequency	1592 Hz							
AC resistance: meter	LCR meter	Comparison	1	1E+04	Ω	Resistance	1 Ω , 10 Ω , 100 Ω , 1000 Ω , 10000 Ω	50	$\mu\Omega/\Omega$	2	95%	Yes		36

Calibration and Measurement Capabilities

						Frequency	60 Hz to 10 kHz							
AC resistance: meter	LCR meter	Comparison	1E+05	1E+06	Ω	Resistance	100 kΩ, 1 MΩ	100	μΩ/Ω	2	95%	Yes		37
						Frequency	60 Hz to 10 kHz							
AC voltage ratio: real component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	1 kHz	0.02	μV/V	2	95%	No		38
						Voltage	10 V							
AC voltage ratio: imaginary component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	1 kHz	0.5	μV/V	2	95%	No		39
						Voltage	10 V							
AC voltage ratio: real component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	10 kHz	1	μV/V	2	95%	No		40
						Voltage	10 V							
AC voltage ratio: imaginary component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	10 kHz	1	μV/V	2	95%	No		41
						Voltage	10 V							
AC voltage ratio: real component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	50 Hz	0.1	μV/V	2	95%	No		42
						Voltage	600 V							

Calibration and Measurement Capabilities

AC voltage ratio: imaginary component	Inductive voltage divider, voltage transformer	Reference potential and direct comparison	1E-08	1	V/V	Frequency	50 Hz	0.1	$\mu\text{V}/\text{V}$	2	95%	No		43
					Voltage	600 V								
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	500	500	V	Frequency	100 kHz	54	$\mu\text{V}/\text{V}$	2	95%	Yes		44
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	1 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		45
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	10 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		46

Calibration and Measurement Capabilities

AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		47
AC/DC voltage transfer: AC/DC transfer difference at medium voltages	Thermal converter (directly connected), AC/DC transfer standard	Direct comparison	3	3	V	Frequency	1 kHz	1	$\mu\text{V}/\text{V}$	3	99%	Yes		48
AC/DC voltage transfer: AC/DC transfer difference at medium voltages	AC/DC transfer standard, thermal converter	Direct comparison	0.5	5	V	Frequency	40 Hz to 15 kHz	20	$\mu\text{V}/\text{V}$	3	99%	Yes		49
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	5	600	V	Frequency	40 Hz to 15 kHz	20	$\mu\text{V}/\text{V}$	3	99%	Yes		50

Calibration and Measurement Capabilities

AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	500	500	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		51
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	500	500	V	Frequency	50 kHz	46	$\mu\text{V}/\text{V}$	2	95%	Yes		52
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	500	500	V	Frequency	100 kHz	54	$\mu\text{V}/\text{V}$	2	95%	Yes		53
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	1 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		54

Calibration and Measurement Capabilities

AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	10 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		55
AC/DC voltage transfer: AC/DC transfer difference at higher voltages	Thermal converter with range extender, AC/DC transfer standard	Direct comparison	1000	1000	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		56
AC voltage up to 1000V: source	Multifunction calibrator: ACV	Direct comparison	3	3	V	Frequency	1 kHz	1	$\mu\text{V}/\text{V}$	3	99%	Yes		57
AC voltage up to 1000V: source	Multifunction calibrator: ACV	Direct comparison	0.5	600	V	Frequency	40 Hz to 15 kHz	20	$\mu\text{V}/\text{V}$	3	99%	Yes		58
AC voltage up to 1000V: source	Multifunction calibrator: ACV	Direct comparison	500	500	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		59
AC voltage up to 1000V: source	Multifunction calibrator: ACV	Direct comparison	500	500	V	Frequency	50 kHz	46	$\mu\text{V}/\text{V}$	2	95%	Yes		60
AC voltage up to 1000V: source	Multifunction calibrator: ACV	Direct comparison	500	500	V	Frequency	100 kHz	54	$\mu\text{V}/\text{V}$	2	95%	Yes		61

Calibration and Measurement Capabilities

AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	3	3	V	Frequency	1 kHz	1	$\mu\text{V}/\text{V}$	3	99%	Yes		62
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	0.5	600	V	Frequency	40 Hz to 15 kHz	20	$\mu\text{V}/\text{V}$	3	99%	Yes		63
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	500	500	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		64
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	500	500	V	Frequency	50 kHz	46	$\mu\text{V}/\text{V}$	2	95%	Yes		65
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	500	500	V	Frequency	100 kHz	54	$\mu\text{V}/\text{V}$	2	95%	Yes		66
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	1000	1000	V	Frequency	1 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		67

Calibration and Measurement Capabilities

AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	1000	1000	V	Frequency	10 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		68
AC voltage up to 1000V: meter	AC voltmeter, multimeter: ACV, multifunction transfer standard: ACV	Direct comparison	1000	1000	V	Frequency	20 kHz	24	$\mu\text{V}/\text{V}$	2	95%	Yes		69
AC/DC current transfer: AC/DC transfer difference	Thermal current converter plus shunt, AC/DC transfer	Direct comparison	0.01	10	A	Frequency	40 Hz to 5 kHz	30	$\mu\text{A}/\text{A}$	3	99%	Yes		70
AC current up to 100A: source	Multifunction calibrator: ACI, transconductance amplifier	Direct comparison	0.01	10	A	Frequency	40 Hz to 5 kHz	30	$\mu\text{A}/\text{A}$	3	99%	Yes		71
AC current up to 100A: meter	AC ammeter, multimeter: ACI, multifunction transfer standard: ACI	Direct comparison	0.01	10	A	Frequency	40 Hz to 5 kHz	30	$\mu\text{A}/\text{A}$	3	99%	Yes		72
AC power and energy: single phase power at frequencies < 400Hz	Power meter, energy meter, power converter, wattmeter	AC-DC power/energy comparison	30cosφ	40000cosφ	W	Frequency	45 Hz to 65 Hz	15	$\mu\text{W}/\text{W}$ or $\mu\text{J}/\text{J}$	3	99%	Yes		73
						Voltage	60 V to 400 V							
						Current	0.5 A to 100 A							

Calibration and Measurement Capabilities

						Power factor: cosφ	0.0 lead and lag, 0.5 lead and lag, 0.866 lead and lag, 1.0							
AC power and energy: three phase	Power meter, energy meter, power comparator	Comparison	30cosφ	40000cosφ	W	Frequency	45 Hz to 65 Hz	80	µW/W or µJ/J	3	99%	Yes		74
						Voltage	60 V to 400 V							
						Current	0.5 A to 100 A							
						Power factor:cosφ	0.0 lead and lag, 0.5 lead and lag, 0.866 lead and lag, 1.0							
Magnetic fields below 50 kHz: DC magnetic flux density and applied magnetic field strength	Magnetic flux density meter, magnetic field strength meter	Hall effect, NMR	0.03	0.1	mT	Stability of magnetic field	0.1 nT	0.3	nT	3	99%	No		75
Magnetic fields below 50 kHz: DC magnetic flux density and applied magnetic field strength	Magnetic flux density meter, magnetic field strength meter	Fluxgate, NMR, AMR	10	100000	nT	Stability of magnetic field	0.1nT	1.5	nT	2	95%	No		76

Calibration and Measurement Capabilities

Magnetic fields below 50 kHz: DC magnetic flux density and applied magnetic field strength	Magnetic flux density meter, magnetic field strength meter	Hall effect, NMR	0.1	50	mT	Stability of magnetic field	5 mT	15	mT	3	99%	No		77
Magnetic fields below 50 kHz: DC magnetic flux density and applied magnetic field strength	Magnetic flux density meter, magnetic field strength meter	Hall effect and NMR	0.05	1.5	T	Stability of magnetic field	1.5 mT	1	mT/T	3	99%	Yes		78
Magnetic fields below 50 kHz: AC magnetic flux density and applied magnetic field strength	Magnetic flux density meter, magnetic field strength meter	Electromagnetic induction	0.1	700	mT	Stability of magnetic field	10 nT	2	mT/T	3	99%	Yes		79
Magnetic field below 50 kHz: magnetic flux	Flux meter, flux etalon	Integration	10	1000	mWb	Stability of current	1.00E-04	2 to 5	mWb/Wb	3	99%	Yes		80
Inductance: mutual inductance	Fixed mutual inductance	Bridge comparison	0.1	100	mH	Stability of current	1.00E-04	0.1 to 5	mH/H	3	99%	Yes		81
Magnetic field below 50 kHz: turn area	Pick-up coil	Standard coil calculation	100	100000	cm ²	Stability of current	1.00E-04	2 to 5	1E-03	3	99%	Yes		82

Calibration and Measurement Capabilities

Soft magnetic sheet material: specific total power loss	Epstein, ring and single sheet sample	Epstein frame	0.1	100	W/kg	Peak magnetic polarisation	0 T to 2 T	15	1E-03	2	95%	Yes		83
Soft magnetic sheet material: peak value of DC magnetic polarisation	Epstein, ring and single sheet sample	Epstein frame	0.1	2	T	Peak magnetic field strength	0 A/m to 10000 A/m	10	mT/T	2	95%	Yes		84
Soft magnetic sheet material: peak value of AC magnetic polarisation	Epstein, ring and single sheet sample	Epstein frame	0.1	2	T	Peak magnetic field strength	0 A/m to 10000 A/m	10	mT/T	2	95%	Yes		85
Soft magnetic sheet material: peak value of magnetic strength	Epstein, ring and single sheet sample	Epstein frame	1	10000	A/m	Peak magnetic polarisation	0 T to 2 T	20	1E-03	2	95%	Yes		86
Soft magnetic sheet material: RMS value of magnetic field strength	Epstein, ring and single sheet sample	Epstein frame	1	10000	A/m	Peak magnetic polarisation	0 T to 2 T	20	1E-03	2	95%	Yes		87
Soft magnetic sheet material: specific apparent power	Epstein, ring and single sheet sample	Epstein frame	0.1	200	VA/kg	Peak magnetic polarisation	0 T to 2 T	50	1E-03	2	95%	Yes		88

Calibration and Measurement Capabilities

Soft magnetic sheet material: peak permeability	Epstein, ring and single sheet sample	Epstein frame	1.00E-04	2	H/m	Peak magnetic field strength	0 A/m to 10000 A/m	20	1E-03	2	95%	Yes		89
Soft magnetic sheet material: density	Epstein, ring and single sheet sample	Balance	6500	7800	kg/m ³			10	1E-03	2	95%	Yes		90
Soft magnetic bulk material: magnetic polarisation	Rod, cylinder	Solenoid, electromagnet	0.01	2.5	T	Magnetic field strength	0 A/m to 100000 A/m	10	mT/T	2	95%	Yes		91
Soft magnetic bulk material: magnetic field strength	Rod, cylinder	Solenoid, electromagnet	100	100000	A/m	Magnetic polarisation	0 T to 2.5 T	10	1E-03	2	95%	Yes		92
Soft magnetic bulk material: remanent magnetic flux density	Rod, cylinder	Solenoid, electromagnet	0.01	2	T	Magnetic field strength	0 A/m	10	mT/T	2	95%	Yes		93
Soft magnetic bulk material: coercive magnetic field strength	Rod, cylinder	Solenoid, electromagnet	0.1	1000	A/m	Magnetic flux density	0 T	10	1E-03	2	95%	Yes		94

Calibration and Measurement Capabilities

Soft magnetic bulk material: magnetic saturation polarisation	Rod, cylinder	Solenoid, electromagnet	0.01	2.5	T	Magnetic field strength	up to 100000 A/m	10	mT/T	2	95%	Yes		95
Soft magnetic bulk material: permeability	Rod, cylinder	Solenoid, electromagnet	0.0001	2	H/m	Inductance	0 A/m to 100000 A/m	20	1E-03	2	95%	Yes		96
Feebly magnetic, paramagnetic and diamagnetic material: DC relative permeability	Rod, cylinder	Electromagnet	0.99	1.01				5	1E-03	2	95%	No		97
Hard magnetic material: remanent magnetic flux density	Cylinder, rectangular parallelepiped	Electromagnet	0.1	1.6	T	Magnetic field strength	0 A/m	10	mT/T	2	95%	Yes		98
Hard magnetic material: coercive field strength	Cylinder, rectangular parallelepiped	Electromagnet	500	2500000	A/m	Magnetic flux density	0 T	10	1E-03	2	95%	Yes		99
Hard magnetic material: maximum energy product	Cylinder, rectangular parallelepiped	Electromagnet	50	500	kJ/m ³			25	1E-03	2	95%	Yes		100

Calibration and Measurement Capabilities

Hard magnetic material: magnetic flux density	Cylinder, rectangular parallelepiped	Electromagnet	0.1	2.5	T	Magnetic field strength	3000000 A/m	10	1E-03	2	95%	Yes		101
Hard magnetic material: magnetic polarisation	Cylinder, rectangular parallelepiped	Electromagnet	0.1	1.6	T	Magnetic field strength	3000000 A/m	10	1E-03	2	95%	Yes		102
Magnetic data storage media: reference field of diskette	Diskette		50	200	% (reference: master standard)			5	%	2	95%	No		103
Magnetic data storage media: signal amplitude of diskette	Diskette		50	200	% (reference: master standard)			5	%	2	95%	No		104
Magnetic data storage media: resolution of diskette	Diskette		50	200	% (reference: master standard)			10	%	2	95%	No		105
Magnetic data storage media: peak shift of diskette	Diskette		50	200	% (reference: master standard)			4 for side (0), 8 for side (1)	%	2	95%	No		106
Magnetic data storage media: overwrite of diskette	Diskette		50	200	% (reference: master standard)			15	%	2	95%	No		107

Calibration and Measurement Capabilities

Magnetic video storage media: RF recording current	VHS video cassette tape		0.35	0.75	Vp-p			3	%	2	95%	Yes		108
Magnetic video storage media: RF playback output	VHS video cassette tape		-60	50	dB			0.2	dB (reference: standard tape)	2	95%	No		109
Magnetic video storage media: video S/N	VHS video cassette tape		-60	-7	dB			0.25	dB (reference: standard tape)	2	95%	No		110
Magnetic video storage media: drop-out	VHS video cassette tape		-24	-10	dB	Time width	0.5 µs to 50 µs	0.5	dB (reference: standard tape)	2	95%	No		111
Magnetic video storage media: audio sensitivity	Audio cassettes & VHS cassette tape		-80	20	dB			0.2	dB (reference: standard tape)	2	95%	No		112
Magnetic video storage media: audio frequency response	Audio cassettes & VHS cassette tape		20	20000	Hz			0.2	dB (reference: standard tape)	2	95%	No		113

Calibration and Measurement Capabilities

Magnetic video storage media: output uniformity	Audio cassettes & VHS cassette tape		0	75	dB			0.1	dB (reference: standard tape)	2	95%	No		114
Magnetic video storage media: audio S/N	Audio cassettes		-5	5	dB			1	dB (reference: standard tape)	2	95%	No		115